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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/321,090	05/28/1999	RICHARD L. FRANK	ORA99-03-(OI	5972

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EXAMINER

BENSON, WALTER

ART UNIT	PAPER NUMBER
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2858

DATE MAILED: 07/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/321,090

Applicant(s)
Frank et al.

Examiner
Walter Benson

Art Unit
2858



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Amendment C, filed on, 5/01/2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 and 25-32 is/are rejected.
- 7) ☒ Claim(s) 22-24 is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 15 6) ☐ Other:

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DETAIL ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/01/03 has been entered.
2. Claims 1-32 are now pending.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

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4. Claims 1-21 are rejected under 35 U.S.C. 102(e) as being anticipated by MacKenzie et al. (US Patent No. 6,363,495 and MacKenzie hereinafter).

5. As to claims 1, 4, 5, 19, 20, 21, 25, and 26 MacKenzie discloses an apparatus, method and computer program product [col. 18, lines 40-51] for managing membership of nodes in a computer network cluster, the method comprising:

- a network infrastructure for supporting a plurality of nodes in a network cluster (Fig. 1);
- a storage device separated from the network infrastructure and interconnectable to a plurality of nodes (106, Fig. 1; and col. 7, line 21);
- a message location on a sharable storage device (col. 11, lines 19-22);
- a node interconnected with the storage device (Fig. 3);
- a manager mechanism to grant membership in the network cluster to the node based on the node having access to the storage device, using the message location (col. 17, lines 30-56).

6. As to claims 2, 9, and 14, MacKenzie discloses an apparatus, method and computer program product [col. 18, lines 40-51] for managing membership of nodes in a computer network cluster, the method further comprising:

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revoking membership of the node in the network cluster if the node ceases to have access to the sharable storage device (col. 4, lines 58-59).

7. As claim 3, 10, and 15, MacKenzie discloses an apparatus, method and computer program product [col. 18, lines 40-51] for managing membership of nodes in a computer network cluster, the method further comprising:

ceasing operation of the network cluster if no node has access to the shareable storage device (col. 11, lines 42-47).

8. As to claims 6, 11, and 16, MacKenzie discloses a system for managing membership of nodes in a computer network cluster, comprising:

where granting membership comprises, from the node, accessing a message location in the sharable storage device (col. 8, lines 55-60).

9. As to claims 7, 12, and 17, MacKenzie discloses a system for managing membership of nodes in a computer network cluster, comprising:

where the message location identifies the cluster by identifying at least one physical storage device from the sharable storage device that is shared by the cluster members (col. 9, lines 16-20).

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10. As to claims 8, 13, and 18, MacKenzie discloses a system for managing membership of nodes in a computer network cluster, comprising:

where granting membership comprises accessing each identified physical storage device (col. 9, lines 22-24).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 27-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over MacKenzie in view of Slaughter et al. (US. Patent No. 6,446,219 B2 and Slaughter hereinafter).

13. As to claims 27-32 MacKenzie discloses an apparatus, method and computer program product [col. 18, lines 40-51] for managing membership of nodes in a computer network cluster, the method comprising:

a network infrastructure for supporting a plurality of nodes in a network cluster (Fig. 1);

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a storage device separated from the network infrastructure and interconnectable to a plurality of nodes (106, Fig. 1; and col. 7, line 21);

a message location on a sharable storage device (col. 11, lines 19-22);

a node interconnected with the storage device (Fig. 3);

MacKenzie does not expressly disclose;

a manager mechanism to monitor node membership in a computer network cluster based on the accessibility of the shareable storage device to each node, including adding/removing a node to the computer network cluster in response to the node obtaining access to the sharable storage device.

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by MacKenzie, as evidenced by Slaughter.

In an analogous art, Slaughter discloses a system that provides each node of the cluster access to each storage device of the cluster having:

a manager mechanism to monitor node membership in a computer network cluster based on the accessibility of the shareable storage device to each node, including adding/removing a node to the computer network cluster in response to the node obtaining access to the sharable storage device ((col. 8, lines 44-51).

Given the teaching of Slaughter, a person having ordinary skill in the art at the time of the invention would have readily recognized the desirability and advantages of modifying MacKenzie by employing the well known or conventional features of cluster management, such

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as disclosed by Slaughter, by determining that physical resources have changed and modifying links to the changed physical resources.

Allowable Subject Matter

14. Claims 22-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art of record fails to teach or disclose individually or in combination an apparatus and method for managing membership of nodes in a computer network cluster where the manager mechanism always grants membership on the network cluster to the node exclusively based on the node having access to the storage device.

Prior Art Made of Record

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

A. Gamache et al. (US Patent No. 6,453,424 B1) discloses a method and apparatus for distributing cluster data among various storage devices of a server cluster;

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B. Matena (US Patent No. 5,996,075) discloses a method and apparatus for fencing of resources on a shared disks on a networked system;

C. Chandra et al. (US Patent No. 6,587,860 B1) discloses an apparatus and method for tracking access to data resources in a cluster environment.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter Benson whose telephone number is (703) 306-4525. The examiner can normally be reached on Monday to Thursday and alternate Fridays from 6:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, N. Le, can be reached on (703) 308-0750. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722 or 7724.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3800.

Walter Benson *WB*
Patent Examiner

July 7, 2003

Walt E. Snow
WALTER E. SNOW
PRIMARY EXAMINER